hour. The amount of fuel/oil dripping makes it desirable to have 10 inches of concrete rather than the asphalt surface. Ingress and egress areas could have an asphalt surface. Generally, pullouts and layover/terminals paving will be matched to the paving of the existing roadway.

D. Walkways

Occasionally the development of a pullout/layover and landing pad requires a walkway to provide access by ambulatory or disabled patrons who have either been using the existing shoulder of the road or boarding at the paved intersections of the two streets. The walkway is constructed of either asphalt or concrete to match existing walkways. If no walkway(s) exist, asphalt is generally used.

E. Curb Ramps

These are installed where new curb work is being done or into existing curbs where curb extensions are being made. This improvement is, along with landing pads, the key to providing accessibility for people with disabilities. Generally only the immediate ramps are constructed; however, in some cases and in some jurisdictions (as required) ramps are installed at the corners of the intersection not immediately affected. In some instances, this is the only improvement made -- clearly to facilitate accessibility.

E. Corner Radius Work

These are constructed to allow for safe transit operations. Most improved intersections, especially in Seattle, were constructed at a time when traffic volumes and bus sizes allowed a standard radius of 15-20 feet. Today the minimum radius needed to provide easy, safe right turning movements is 30 feet, and 35-40 feet is desirable. This is in conflict with the current desire to make crossing areas as short as possible; frequently by development of corner "bulbs". The problem for buses with a short radius is that the front of the bus has to cross over into the next lane (four-lane road) or the centerline (two-lane road) of the roadway the bus is traveling on; and then into the second lane or lane of oncoming traffic of the roadway the bus is turning onto. Otherwise, the right side rear dual wheels go up over the curb, presenting pedestrian safety problems and damage to the curb and sidewalk. The adjusted radius eliminates or minimizes such problems. Next to potholes in a pullout, short corner radii at intersections is the problem most often complained about by bus drivers and safety section staff.

F. Street/Traffic Light

Occasionally the safe use of a bus zone is affected by poor street lighting. In such instances, Metro will work with the local power company to establish improved lighting from one of several options. There are also

instances where safe and smooth transit operations are hampered by limited traffic controls at an intersection. Metro will work with the local jurisdiction to either modify existing traffic control lights or contribute in part or whole toward the installation of new equipment where required by transit operations. Signal installations should meet one or more warrants defined in the Manual on Uniform Traffic Control Devices (MUTCD). Since MUTCD warrants do not consider vehicle acceleration and size, signals may also be considered where, in the collective opinion of the Safety Section, a significant hazard exists where buses enter an uncontrolled intersection. Each circumstance is evaluated on its own merits. It may even be deemed more effective to alter the bus route vs. installing a traffic light.

Other special types of work may be done, depending on the situations. The descriptions given above are general rather than specific detailed explanations. In some cases, greater detail is provided in the Bus Zones Section elsewhere in these guidelines. Complete details and specifications can be secured from Metro by contacting Paul Alexander, the TFASP project manager at 684-1599. All details and specifications apply as minimum standards whether the work is done by Metro, a local jurisdiction, or by a private developer as part of traffic mitigation requirements.

Section 5
Bus Zones

BUS ZONES

A bus zone is a designated space for loading and/or unloading passengers. A zone accommodating one bus is normally from 80 to 160 feet in length. In business districts, during peak hours, this length may be extended. If a bus zone is located in an area where parking is permitted, the zone length is marked to keep the area free of cars.

I. Classification

In determining the proper location of bus stops, the choice lies between near-side, far-side and mid-block stops. The standards used by Metro to designate stops are based on the recommended practices approved by the Institute of Traffic Engineers Board of Directors on August 4, 1967, and modified and adopted by Metro in November 1975.

A. Near-Side Stops

A near-side stop is one which is located immediately before an intersection.

1. Conditions under which near-side stops are recommended

   a. Traffic is heavier on the leaving side than on the approach side of the intersection.

   b. The cross street is a one-way street where traffic flows from right to left.

   c. At intersections controlled by signals, or stop or yield signs, when transit operations are more critical than traffic or parking.

   d. Where there is a right turn, if curb space is critical but traffic is not critical, a near-side stop should be established before the turn.

2. Advantages

   a. There is less interference with traffic turning into the bus route street from a side street.

   b. Passengers generally alight close to a crosswalk.

3. Disadvantages

   a. Heavy right turns can cause conflicts, especially when a vehicle makes a right turn from the left of a stopped bus.

b. A bus standing at a near-side stop obscures the sight distance of a driver entering the street from the right as well as pedestrians crossing.

c. A bus standing at a near-side stop obscures the sight of a stop sign on the right corner.

4. Dimensions

To accommodate a standard (40 foot) bus or an articulated (60 foot) bus, a near-side stop on streets with speed limits of 35 mph or less should be 130 feet in length. The head of the zone should be 30-50 feet away from the crosswalk when there is a stop sign. This includes 60 feet for pull-in and 70 feet of parallel curb. The intersection serves as the pull-out space. See Figure 4-1. (For bus stops with multiple coaches, see Figure 1-5 and layover space dimensions on Page 9.) Figure 4-3 shows recommended dimensions for bus pullouts on roadways with speed limits of 35 mph or more.

5. Stop Distance Prior to a Controlled Intersection

a. 0 feet when bus stops in driving lane with an overhead traffic signal.

b. 30 feet when there is a stop sign and flashing overhead stop beacon.

c. 50 feet when there is only a sign.

B. Far-Side Stops

A far-side stop is one which is located immediately following an intersection.

1. Conditions under which far-side stops are recommended

a. Traffic is heavier on the approach side than on the leaving side of the intersection.

b. The crossing street is a one-way street where traffic flows from left to right.

c. At intersections where heavy left or right turns occur.

d. At intersections where bus routes and heavy traffic movements diverge.

e. At intersections controlled by signals or stop or yield signs, when traffic or parking is critical and transit operations are not critical.

2. Advantages

a. Right turns by vehicles can be made with less conflict.

b. Left-turning buses approaching a far-side (around the corner) stop begin their left turn from the proper lane. Leaving a near-side stop, operators would have to cross traffic in the lane to their left.

c. Buses stopped in a zone do not obstruct sight distance to the left for vehicles entering or crossing from a side street.

d. At a signalized intersection, buses can find a gap to enter the traffic stream without interference, except where there are heavy turning movements into the street with the bus route.

e. Waiting passengers assemble at less crowded sections of the sidewalk.

f. Buses in the bus stop will not obscure traffic control devices or pedestrian movements at the intersection.

3. Disadvantages

a. Intersections may be blocked if other vehicles park illegally in the bus stop, thereby obstructing buses and causing traffic to back up across the intersection.

b. Stops on a narrow street or within a moving lane may block traffic on both the street with the bus route and on the cross street.

c. A bus standing at a far-side stop obscures sight distance to the right of a driver entering the bus street from the right.

d. Where the bus zone is too short for occasional heavy demand, the overflow will obstruct the cross street.

4. Dimensions

To accommodate a standard (40-foot) bus or an articulated (60-foot) bus a far-side stop on streets with speed limits of 35 mph or less should be 110 feet in length. This includes 70 feet of parallel curb and 40 feet of pull-out. The intersection is used for the pull-in space. See Figure 4-1. (For bus stops with multiple coaches, see Figure 1-6 on page 1-10.) Figure 5-4 shows recommended

dimensions for bus pullouts on roadways with speed limits of 40 mph or more.

C. Mid-Block Stops

A mid-block stop is one which is located 300 feet or more beyond or before an intersection.

1. Conditions under which mid-block stops are recommended

   a. Traffic or physical street characteristics prohibit a near or far-side stop adjacent to an intersection.

   b. Large factories, commercial establishments, or other large bus passenger generators exist, and heavy loading makes the location desirable.

      A mid-block stop should be located at the far side of a mid-block pedestrian crosswalk, if one exists, so standing buses will not block a motorist's view of pedestrians in the crosswalk.

2. Advantages

   a. Buses cause a minimum of interference with sight distance of both vehicles and pedestrians.

   b. Stops can be located adjacent to major bus passenger generators.

   c. Waiting passengers assemble at less crowded sections of the site or move to another intersection.

   d. Nearby driveways may be used as pull-in and pull-out space.

3. Disadvantages

   a. The removal of considerable curb parking is required.

   b. Pedestrian jaywalking is more prevalent. This is hazardous and creates vehicular friction and congestion.

   c. Patrons from cross streets must walk faster.

4. Dimensions

   To accommodate a standard (40-foot) bus or an articulated (60-foot) bus, a mid-block stop on streets with speed limits of 35 mph or less should be 170 feet in length. The head of the zone shall be 30 feet away from a crosswalk. This includes 60 feet for pull-in, 70 feet of parallel curb and 40 feet for pull-out. See Figure 5-3. (For bus stops

with multiple coaches, see Figure 1-6 and layover space dimensions on Page 1-10.) Figure 5-4 shows recommended dimensions for bus pullouts on roadways with speed limits of 40 mph or more.

II. General Guidelines

A. Frequency of Stops

- Metro's Transportation Service Guidelines indicate that bus zones are initially located on an average of 4 to 6 stops per route mile along local residential collection and distribution segments of a new route.

  Additional stops may be added if warranted but should not exceed the basic stop spacing guidelines of 8 stops per mile and no two stops should be within 500 feet of one another. Metro attempts to locate bus stops so that no passenger will have to walk more than a quarter mile to get to a bus stop.

- Spacing may range from one stop per block where city blocks are 500 or more feet in length, to stops staggered in every second or third block where city blocks are shorter.

- Location of important buildings and traffic generators, and the configuration of side streets leading into the bus route, should be considered in spacing the stops.

- Stops on either side of a two-way street should correspond with one another whenever possible.

- When consistent with safety and adequate sight distance guidelines, bus stops can be combined with mandatory stops required for traffic signals and railroad crossings.

B. Pedestrian Considerations

- There should be no street furniture or trees within 4 feet of the curb in a bus zone, so that opening bus doors are not blocked by light poles, landscaping, or other obstructions. Eight feet of clearance is also needed for wheelchair lift operation -- 4 feet for the lift to extend and 4 feet for the wheelchair to maneuver beyond the lift. The minimum clearance for a non-accessible zone is 3 feet.

- Consideration should be given to the proximity of shelters, adequate lighting, and proximity of traffic control features. Street furniture should be placed so it does not block an operator's view of intending passengers or obstruct sight distance. Bus stop signs should have a minimum clearance of 7 feet and trees should be a minimum of 8 feet from the ground.

- Along avenues with planted or grass parkway strips, a sidewalk slab should be added between the existing sidewalk and the curb where a bus passenger would otherwise have to cross wet grass or mud during inclement weather. (See Figure 5-1, Bus Loading.)

- For passenger safety reasons bus zones should be avoided at locations where there are a series of raised and lowered curbs.

- If transfer movements between bus routes are heavy, consideration should be given to locating bus stops so as to minimize crosswalk movements of transferring passengers.

C. Guidelines for Accessible Bus Zones

All bus zones should be established in areas in which the wheelchair lift can be used. When this is not possible, efforts should be made to have the zone improved to allow for lift usage. Only as a last resort should a zone be non-accessible.

- The width and depth of the zone shall provide an adequate physical environment which will allow the lift to properly operate and to effectively interface with adjoining surface allowing the passenger in the wheelchair to maneuver on and off the lift. A clear paved loading area measuring a minimum of 10 feet in length by 8 feet in width is needed.

- Efforts shall be made to locate all bus zones away from driveways. However, if it is determined that a zone provides a reasonable level of safety for passengers, even when located at or blocking a driveway, then it may be used for wheelchair lift service.

- Efforts shall be made to locate all zones in areas which reduce the potential for rear-end or sideswipe hazards, which have an adequate line of sight, and which have pedestrian paths located out of the street. However, if it is determined that a zone provides a reasonable level of safety for passengers, then it may be used for wheelchair accessible service if there is enough room to allow operation of the lift and maneuvering of the chair.

- All bus zones should have a reasonably close opposite zone whenever possible. When the opposite zone cannot be designated accessible nor can the previous or following opposite zone be used for lift service, then both opposing zones shall be non-accessible.

- A zone without an opposite may, however, be designated accessible upon request of a potential rider.

- In some situations, zones should be designated non-accessible even though the lift may be able to operate safely there. When a zone

cannot be located at any other location, a zone may be non-accessible based on restrictions imposed by the local jurisdiction.

- Flagstop areas shall not be used by the full size transit bus for accessible service. Zones should be established if the route is to become accessible. The determination of accessibility for flag stops shall be made by the individual driver at that stop.

- The Safety Division and Service Planning shall be responsible for determining the accessibility of a zone, in accordance with the above guidelines.

D. Other Considerations

- Pull-out bus stops should be used on two-lane streets and roads with a posted speed limit of 40 mph or higher, or at heavily used stops with longer than average bus dwell times. These stops involve relocating of the curb so the street width is flared and a bus can pull completely out of the normal traffic and parking lanes.

- When a bus route turns left from a one-way street, the preceding bus stop must be located far enough in advance to allow the bus to shift to the left traffic lane.

- It is desirable to avoid "boxing in" a commercial establishment at a corner by having bus zones on both sides of it. However, if there is one predominant transfer movement at an intersection, the bus stop should be located so that passenger walking will be minimized.

- At major passenger generators, bus stops should be located to minimize crosswalk movements.

- Pavement width should be considered in deciding which side of the intersection to locate the bus stop.

- Devices and markings that give the bus stop prominence, such as transit curb painting and tow-away zones, may deter motorists from parking in the bus zone and aid enforcement efforts to keep the zone clear.

- For a description of pullout requirements, see Section II-B in the TFASP section of these guidelines (p. 4-2).

III. Bus Zone Relocation Guidelines

Metro will not move a bus zone that is safely and efficiently meeting Metro's and a local jurisdiction's needs, despite a request by an adjacent property owner, unless the following criteria are met:

- The local jurisdiction approves of the relocation.

- An equal or better location exists that meets Metro's standards for safety, access, landing area, elderly and disabled access and zone spacing.

- The property owner requesting the move secures the initial permission from the new adjoining property owner.

- In the case of a bus zone with a shelter, the property owner requesting that the zone and shelter be moved will be asked to pay for the cost of relocating the shelter (i.e., new shelter footing).

Exceptions to this policy may be justified in the following situations:

- In cases where numerous acts of vandalism against private property or harassment to adjacent property owners have occurred (backed up by insurance claims or police reports), Metro can waive the last two criteria listed above if it feels relocation will help and not just shift the problem.

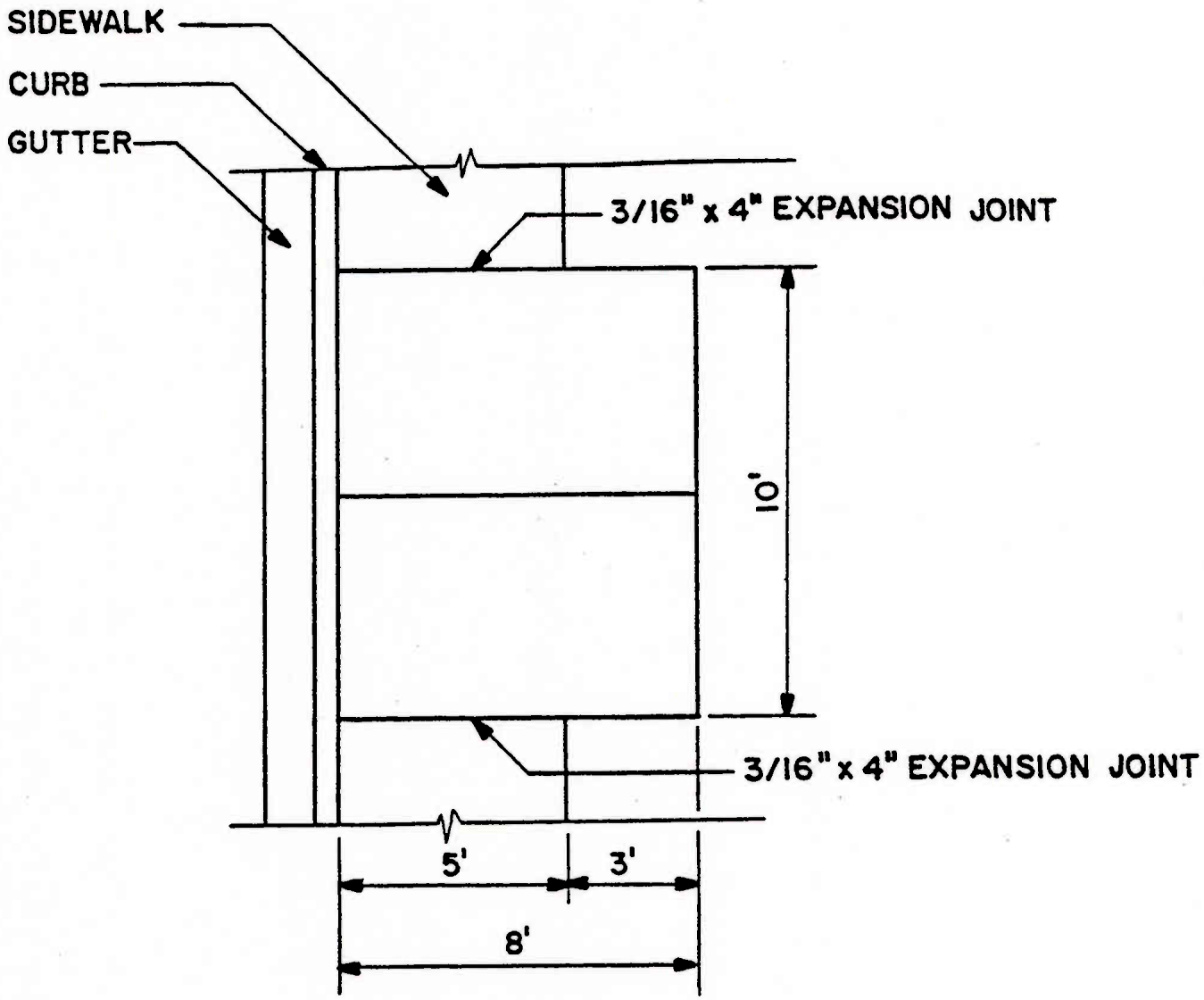
- As a last resort, Metro will consider closing a zone if numerous acts of vandalism against private property or physical assault are reported (insurance or police reports) which can be shown to have a direct connection to bus zone users.

IV. Bus Stop Signs

The bus stop sign should be mounted independently of other signage on its own 2-inch by 2-inch galvanized pole, or if appropriate, on existing light standards. The exact location and mounting is usually determined by a joint survey between Metro and the appropriate jurisdiction.

The bus stop sign should be side mounted on the pole 90° to the street (at a right angle to the direction of travel) with 7 feet of clearance from the ground to the bottom of the sign. When the pole is located between the curb and sidewalk, the sign should be mounted toward the sidewalk. Conversely, if the pole is located outside of the sidewalk, the sign should be mounted toward the street.

In urban areas where curbs and sidewalks exist, the sign should be installed at the head of the zone, not closer than two feet of lateral clearance from the curb face, but always in alignment with existing signage. In rural areas where curbs are non-existent and the bus is stopping on the shoulder, the pole should be installed at the head of the zone with a lateral clearance normally not closer than 10 feet from the edge of the road. Where a bus is stopping on the roadway, the post can be 2 feet off the edge of the road with the sign mounted away from the street. (See King County standards.)



BUS LOADING PAD

NTS

FIGURE 5-1
Bus Loading Pad

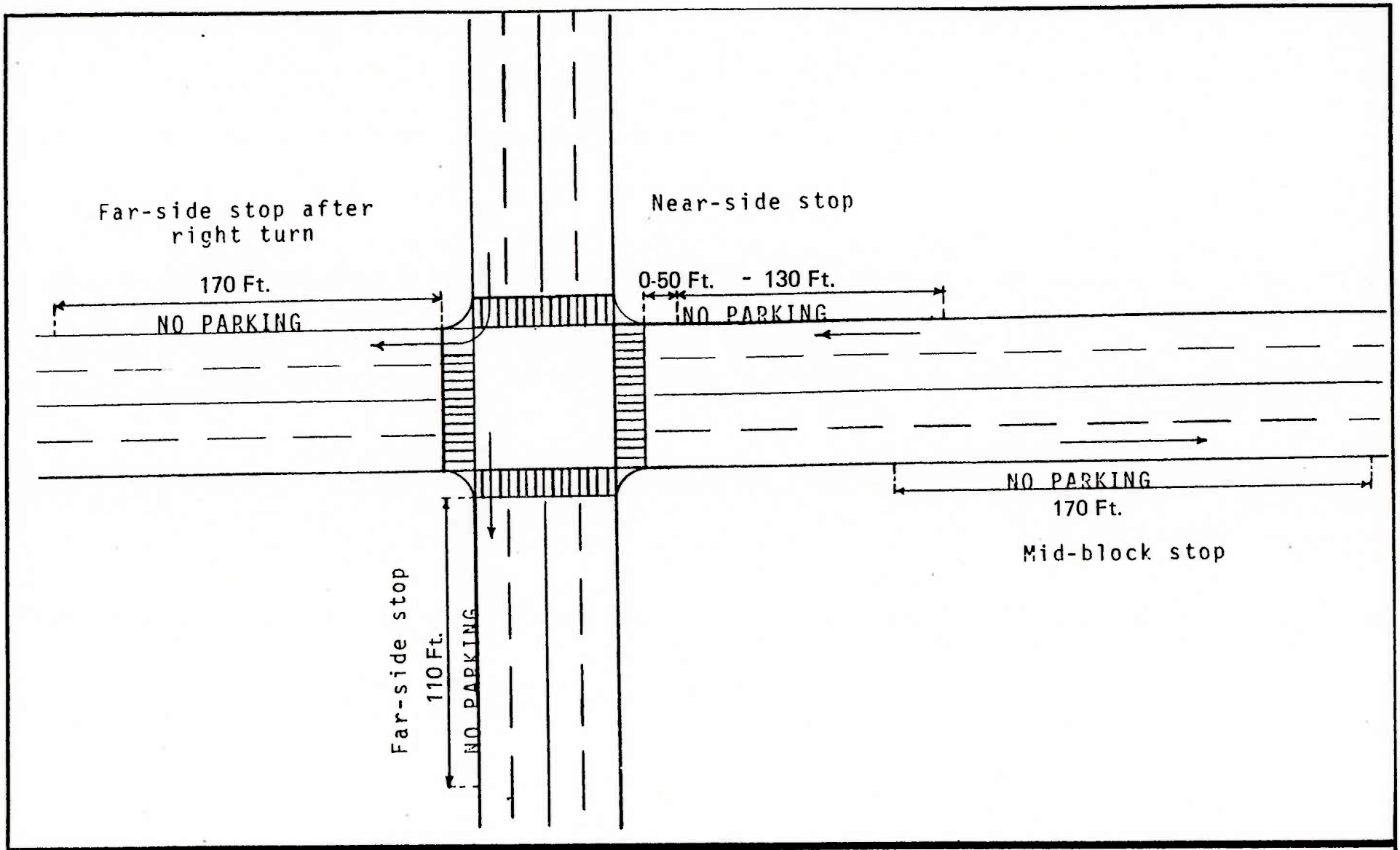
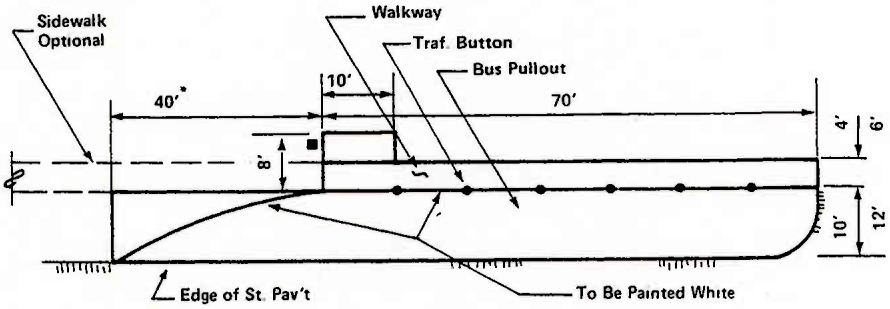
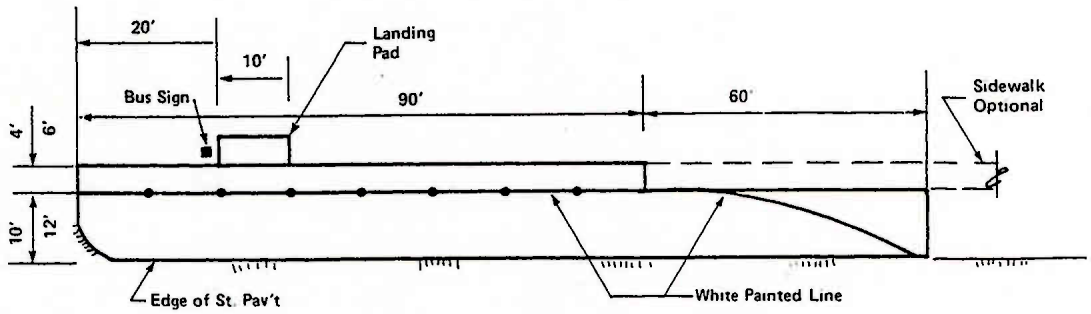


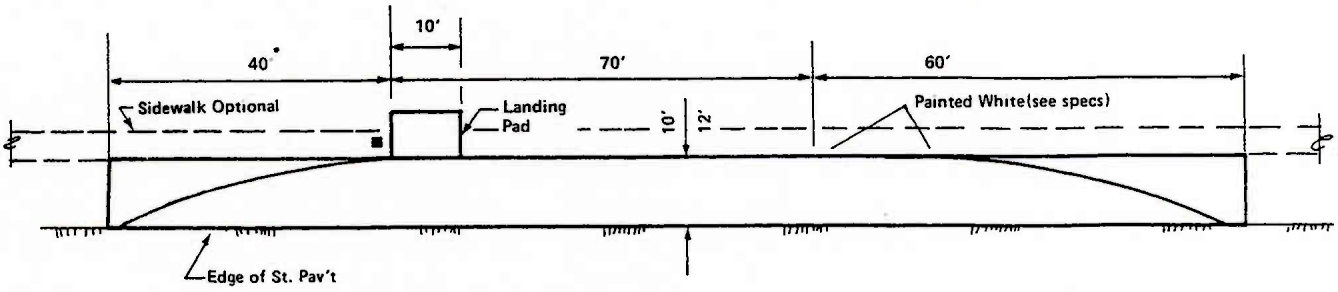
FIGURE 5-2
Bus Stop Lengths



STD FARSIDE BUS PULLOUT



STD NEARSIDE BUS PULLOUT

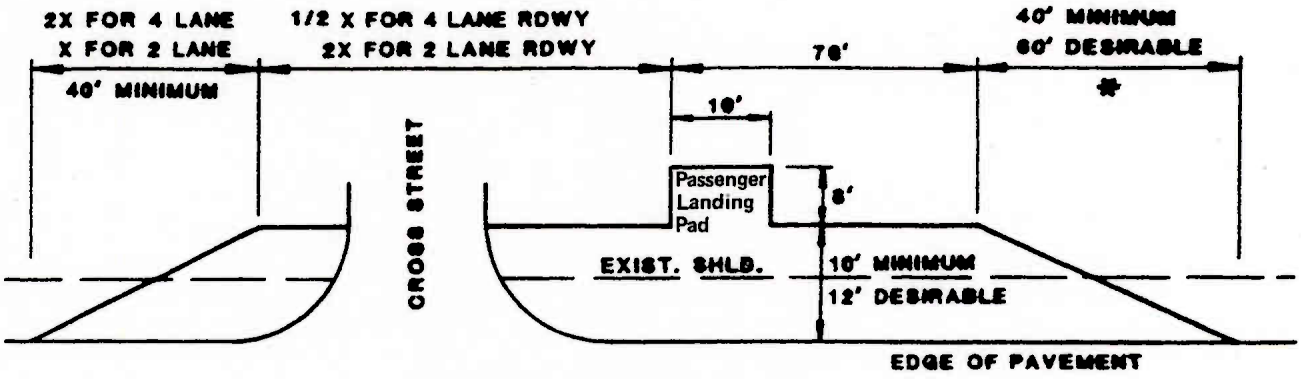


* If shoulder is unimproved ingress taper should be 60' instead of 40'.

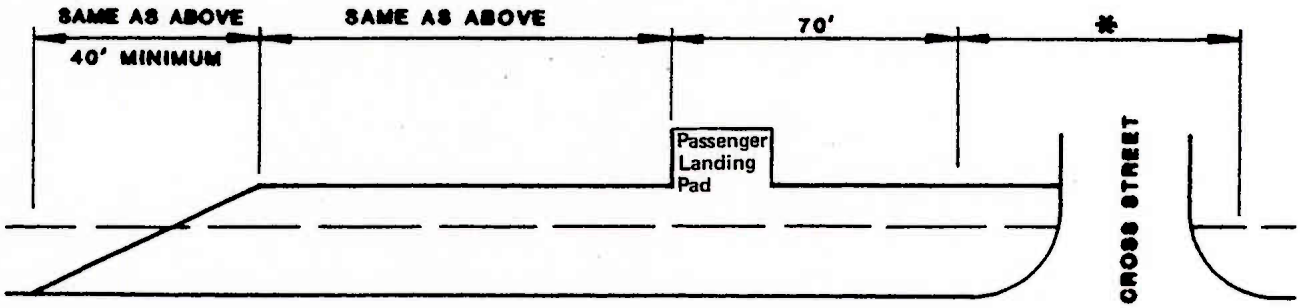
STD MIDDLE BLOCK BUS PULLOUT

FIGURE 5-3

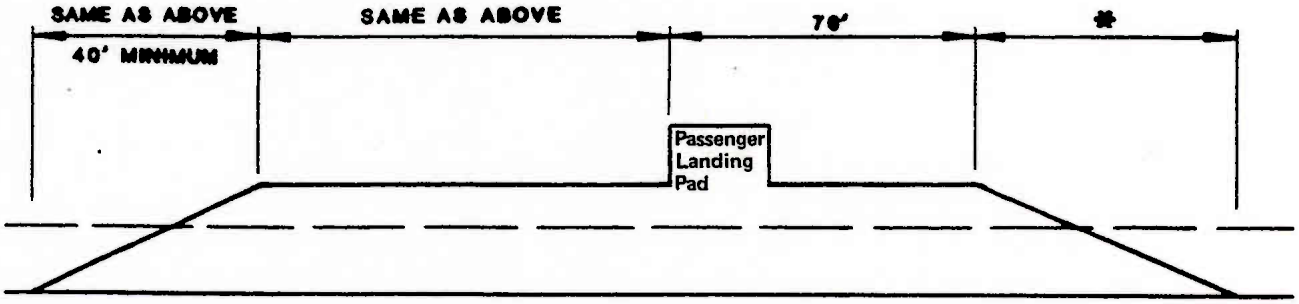
Bus Pullout Designs for Streets with Speed Limits of Less than 40 mph



NEARSIDE BUS PULLOUT



FARSIDE BUS PULLOUT



MIDDLE BLOCK BUS PULLOUT

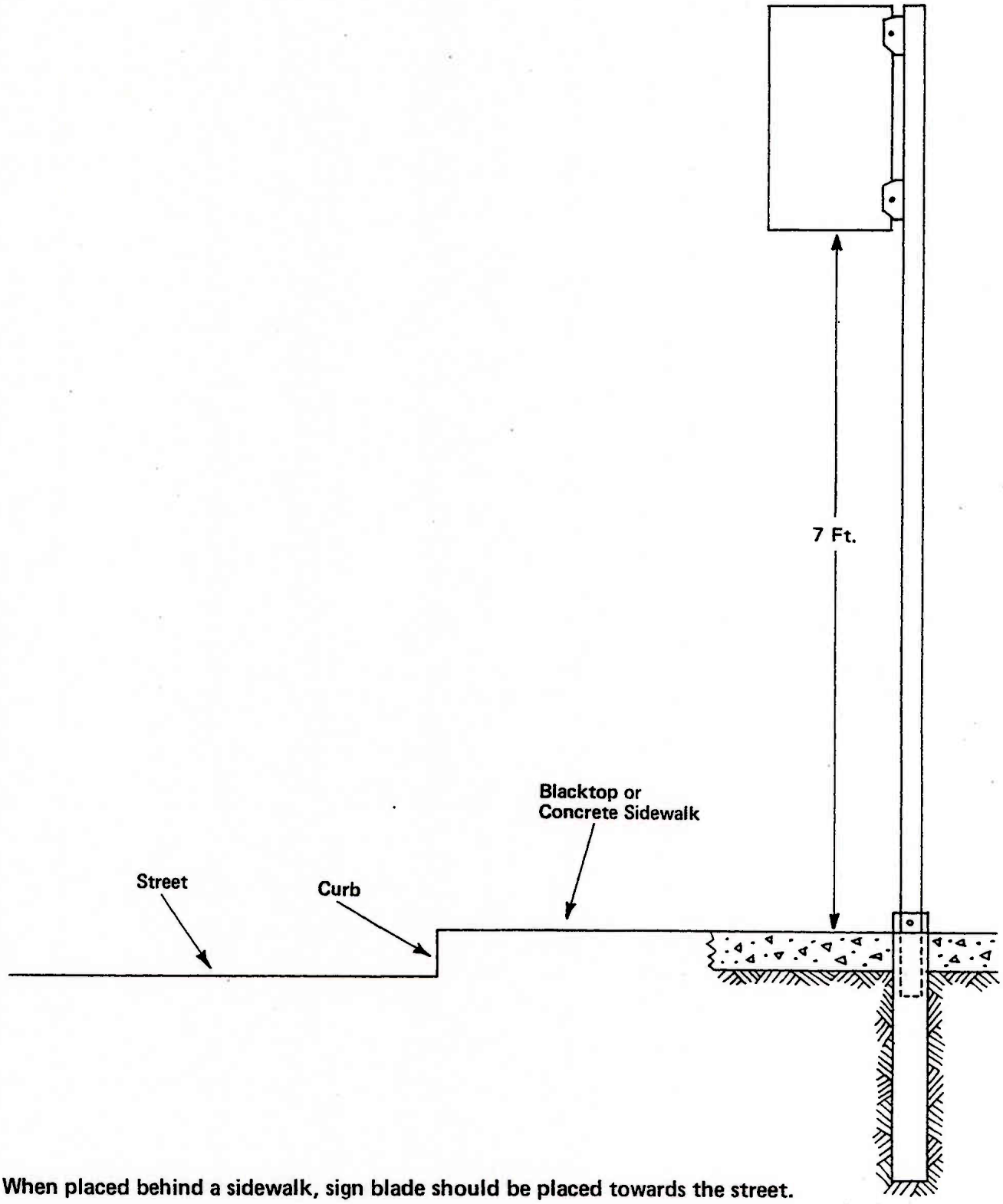
X = SIGNED SPEED LIMIT

X = 0 FOR SIGNED SPEED LIMIT LESS THAN 40 MPH

*FOR WIDTH LESS THAN 12' ADD 30'

FIGURE 5-4

Highway Bus Pullouts for Speed Limits of 40 mph and Over



When placed behind a sidewalk, sign blade should be placed towards the street.

FIGURE 5-5

Typical Bus Stop Sign Installation when Placed behind Sidewalks

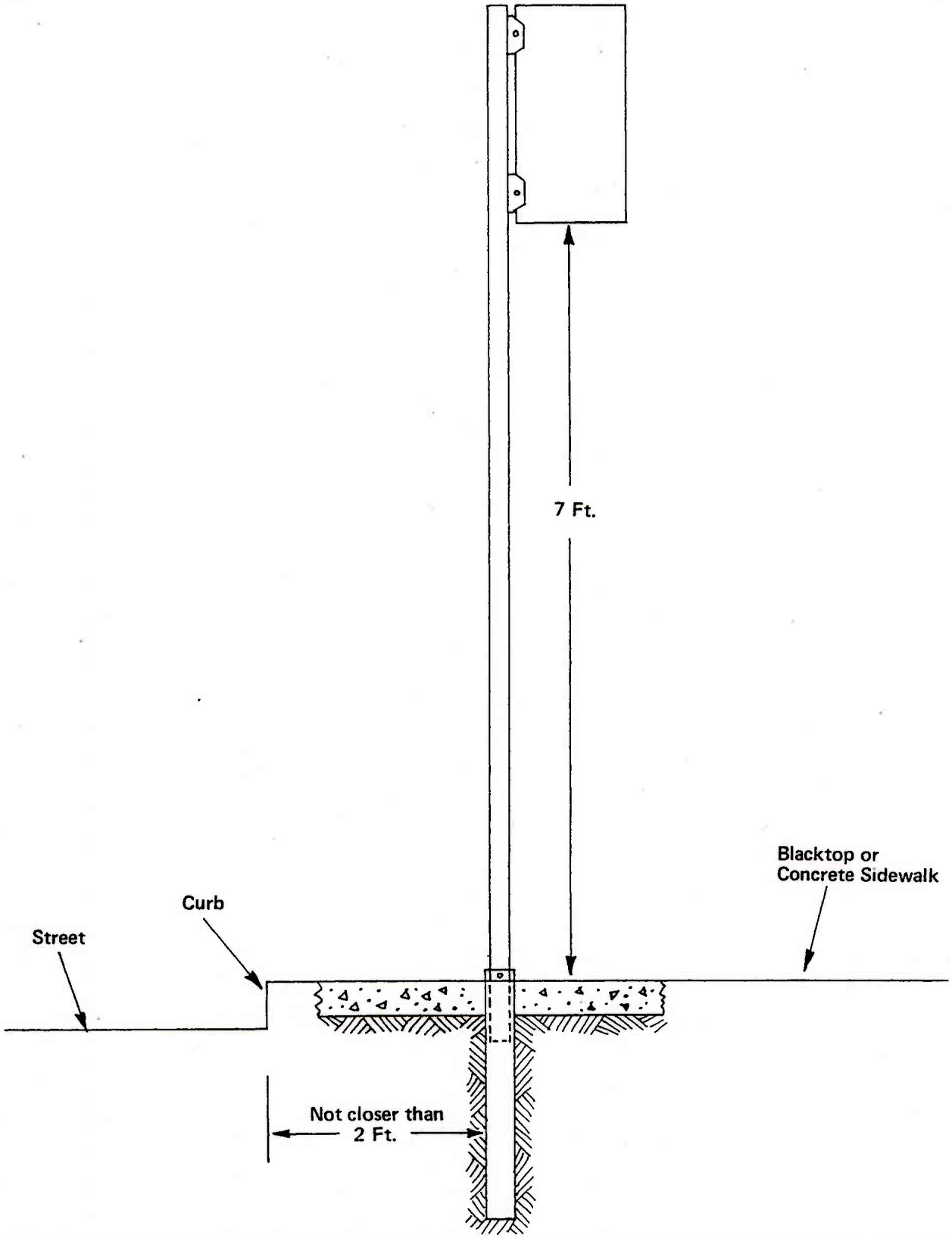


FIGURE 5-6

Typical Bus Stop Sign Installation when Placed between Curb and Sidewalk

Section 6
Passenger Information Facilities

SCHEDULE INFORMATION AT BUS STOPS

Metro has two types of schedule information hardware at bus stops: information signs and schedule holders.

Information signs can display route schedules, promotional materials, miscellaneous customer information, and a map. Information signs are large displays bolted to sidewalks or special landing pads. They are available in three sizes: small information sign, large information sign, and three-sided information kiosk.

Schedule holders are mounted to bus stop sign posts and are available in two sizes: standard and mid-size.

A standard schedule holder can display one to five schedules and can be installed singly or paired. Mid-size schedule holders are equivalent to six standard schedule holders and are always installed as a pair back-to-back on bus stop sign posts.

I. Guidelines for Information Signs

A. Placement Criteria

- Placement is at bus stops with multiple routes, particularly in downtown areas, transfer points, and park-and-ride lots. There are approximately 250 information signs in the service area.
- Locations are determined by service frequency, passenger volumes and major transfer centers. The size of information sign is determined by the amount of information necessary at the bus stop.
- Installation is 90° to curb at the head of the bus zone, schedule side facing toward the oncoming bus.

B. Design Guidelines

- Schedule information is formatted in vertical columns reading in sequential order from left to right and top to bottom.
- Schedule information is copied onto a water-resistant paper which is installed in the sign.
- The frames are made of black anodized aluminum, the route and information panels are made of painted white aluminum, and the schedule information is protected with laminated glass.
- Dimensions:

  Small information sign - 90" high x 22-3/4" wide

Large information sign - 98" high x 28-3/4" wide

Three-sided information kiosk - 98" high x 31" wide (each side)

II. Guidelines for Schedule Holders

A. Placement Criteria

- Schedule holders are placed at the majority of inbound bus stops (stops where buses are headed toward major CBD areas), transfer points, and at key outbound stops.
- Approximately 4,800 zones have schedule holders mounted to bus stop sign posts or shelter frames. About 115 zones have mid-size schedule holders and 760 have two standard schedule holders.
- Installation is on bus stop posts 90° to curb, facing toward the oncoming bus. If this is not practical, the schedule holder may be placed facing toward the street.

B. Design Guidelines

- Schedule information is formatted in vertical columns reading in sequential order from left to right and top to bottom.
- Schedule information is copied onto a water-resistant paper which is installed in the sign.
- Schedule holders are made of sand cast aluminum, black anodized, with clear plexiglass protecting the schedule information.
- Dimensions:

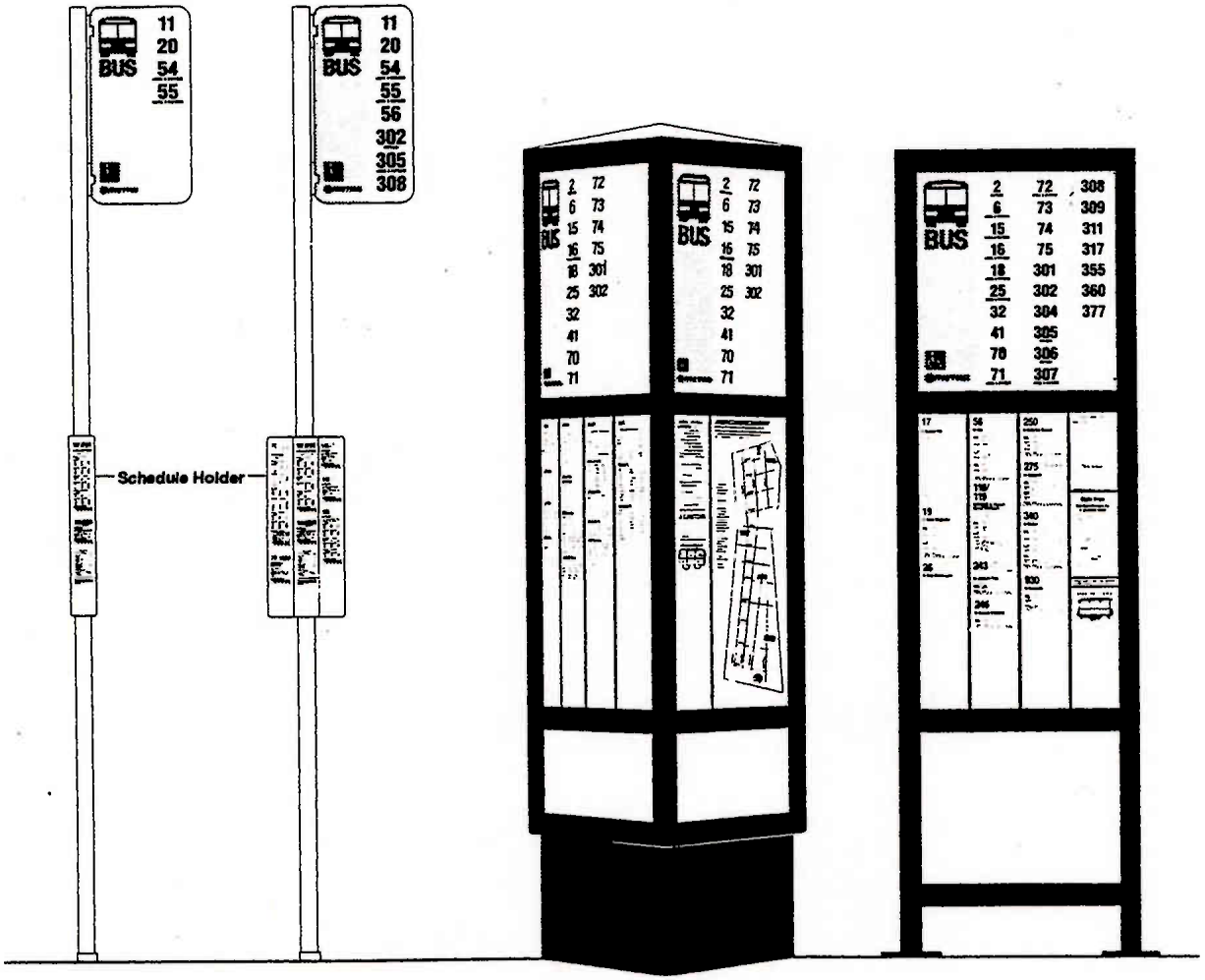
  Standard schedule holder - 21-13/16" high x 3" wide

  Mid-size schedule holder - 22-3/16" high x 9-1/8" wide

III. General Guidelines

Schedule holders are used more extensively than information signs because they are much less expensive, more vandal-resistant, and easier to maintain. Bus stop schedules are produced and installed at each service change. Also, an on-site inspection and minor cleaning of the information signs occurs at service change. Signs and information that have been vandalized between service changes are replaced as those reports are received.

Bus Stop Information Sign and Schedule Holder



Standard Schedule Holder

Mid-Size Schedule Holder

Information Kiosk

Information Sign

FIGURE 6-1
Bus Stop Information Sign and Schedule Holder

INFORMATION DISPLAYS

Metro information is displayed in Transportation Information Centers and Commuter Information Centers. Transportation Information Centers are designed for reaching the broad-based travelling market, including elderly, disabled and student markets and are owned and maintained by Metro. Commuter Information Centers provide Metro rideshare and transit service information targeted specifically to the commuter market and are built and maintained by the building owner. The two types of displays are never located together (although limited commuter information is normally available at a Transportation Information Center).

Transportation Information Centers are modular design displays that can be either freestanding or wall mounted. They can be arranged in a variety of configurations to accommodate space and/or needs for a particular location. Commuter Information Centers come in three configurations--freestanding, wall mount, or kiosk. Both types of displays are designed to compliment building or mall decors.

I. Transportation Information Centers (TICs)

A. Function

Transportation Information Centers provide a transportation information resource for the general public, elderly, disabled, and students. These centers have three basic components:

- Map panels: for the display of Metro's bus system map, downtown Seattle map, downtown Bellevue map, promotional drop-ins (i.e., Longacres, Puyallup Fair, Pass Plus, Commuter Pool, community involvement, etc.) and Metro telephone information numbers (i.e., Metro's 24-hour rider information, Employment Hot Line, Lost and Found, Commendation/Complaints, Custom Bus, Pass Sales, etc.).

- Brochure pocket panels: for display of promotional drop-ins, (i.e. Community Involvement, Service Change Rider Alert and brochures (i.e., Bike and Ride, Longacres, Waterfront Street car, snow brochures, Washington State Ferry schedules, Rider Alerts, and a variety of other transportation brochures).

- 35 pocket timetable panels: for display of route timetables.

B. Design Guidelines

1. Frames

Frames are fabricated out of channel aluminum, pre-drilled and ready for field assembly. The legs are attached to each frame so a separate base assembly will not be needed. The frames are coated in a dark color to go with the dark bronze plexiglass panels.

2. Connectors

The frames are bolted edge to edge for in-line assembly. To assemble the free standing displays, frame connectors are needed. The connectors are a length of channel aluminum tubing cut, pre-drilled, and coated to hold the frame together at different angles; the plexiglass panels are then attached with bolts to the frames.

3. Panels

Each panel is constructed of 24-inch by 63-inch dark bronze acrylite (plexiglass) which is 1/4-inch thick. All pockets and promotional drop-in inserts for each panel are glued or bonded to each panel.

C. Maintenance Considerations

- Transportation Information Centers are the sole responsibility of Metro and are installed and maintained at no cost to building management or the tenants, except in cases of negligence.

- Information distributors employed by Metro make regular visits to each of the installations to refill the racks. The frequency of these visits is based on foot traffic, stock demands, and usage.

II. Commuter Information Centers (CICs)

A. Reasons for Establishing a CIC

1. Mandatory (Memorandum of Agreement (MOA), Director's Rule)

Some CICs may be required by a local jurisdiction as one element of the transportation mitigation measures for a development.

2. Voluntary

CICs are a public service for employees, clients and visitors to the worksite.

B. Location Considerations

CICs are located in areas of high foot traffic and high visibility (e.g., lobbies, cafeterias).

C. Design Guidelines

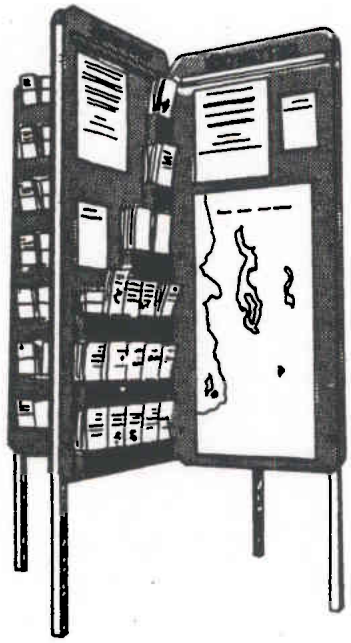
- Developers may construct their own CICs or may have a private builder construct the unit. (Metro can provide a list of private builders.).

- Metro must review and approve CICs designed by developers. The required number of timetable jackets, brochure pockets and map/poster panels will be determined by Metro based upon the number of employees and the transportation service available to the building site.

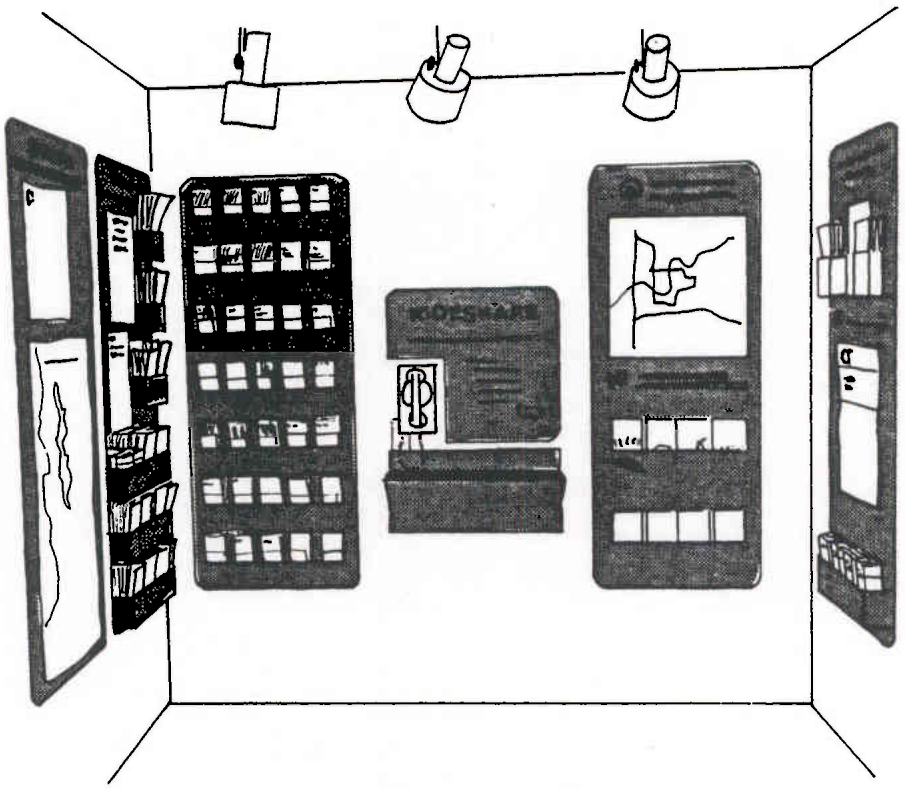
D. Maintenance Considerations

- Commuter Information Centers are owned and maintained by the building management or developer.

- Information distributors employed by Metro and/or Building Transportation Coordinators make regular visits to CICs to refill the racks. The frequency of these visits is based on foot traffic, stock demands and usage.



Free Standing Kiosk



Wall Mounted Display

FIGURE 6-2

Transportation Information Center -- Configuration Options

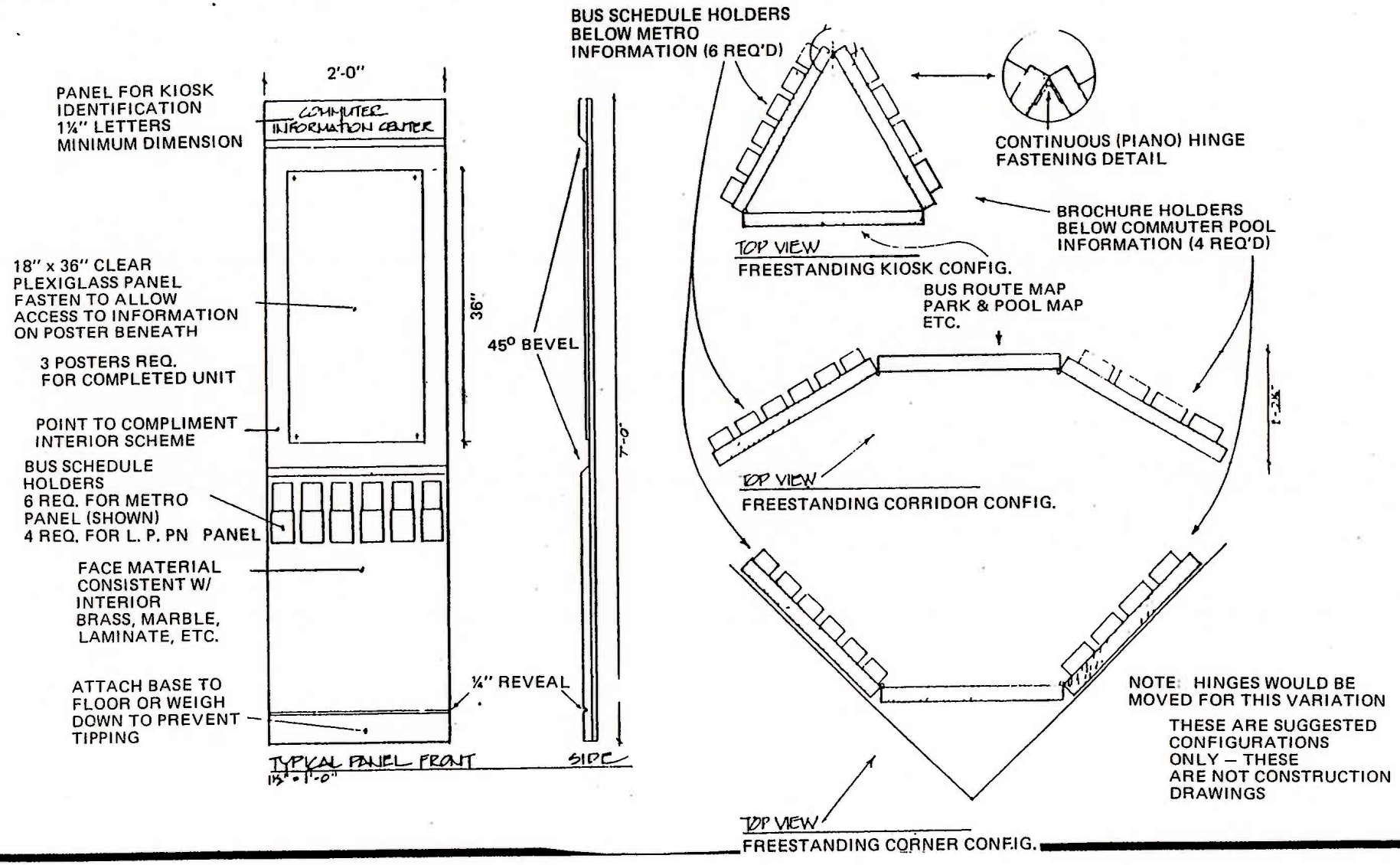
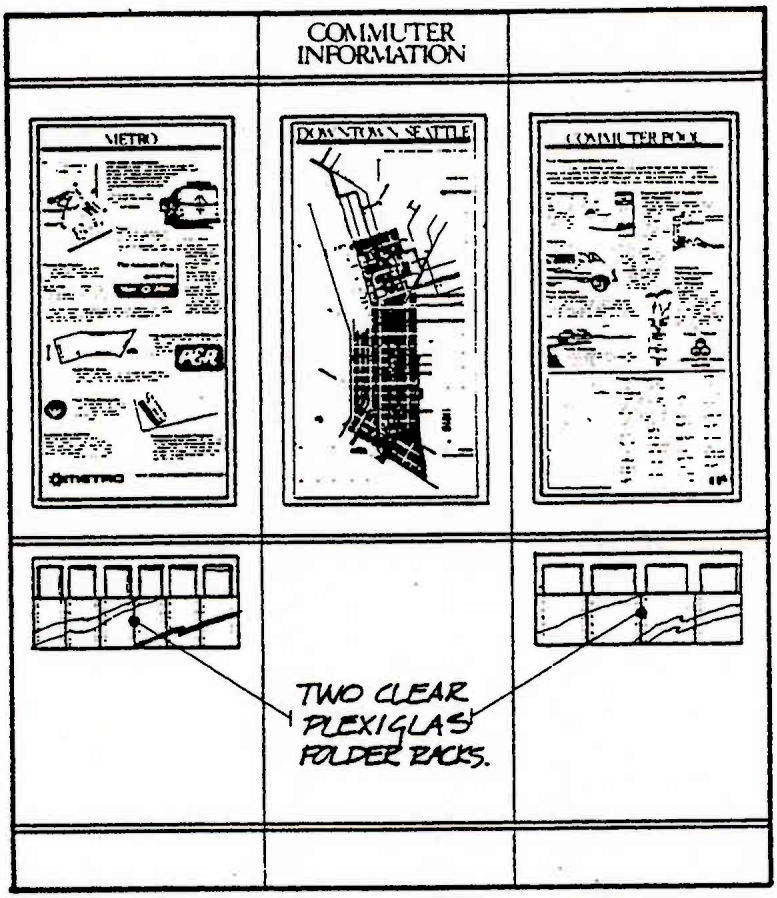


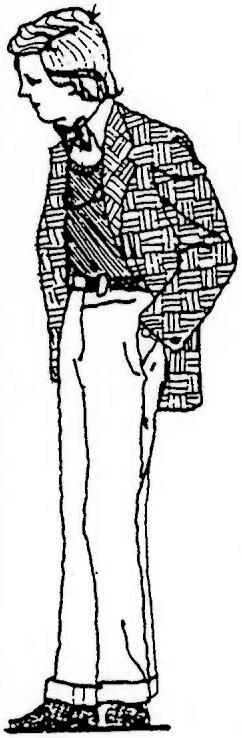
FIGURE 6-3

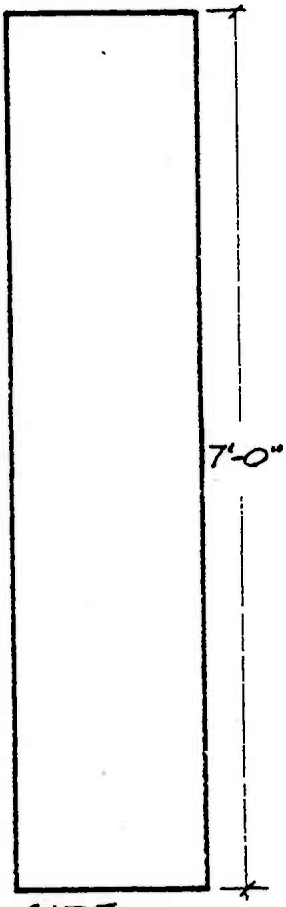
Commuter Information Center -- Configuration Options



FRONT

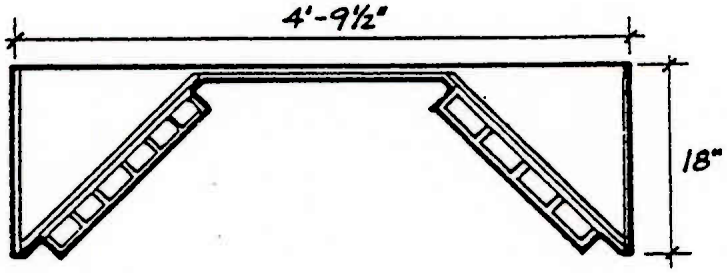
AS VIEWED FLAT





SIDE

ACTUAL



TOP

ACTUAL CONFIGURATION

NOTES:

1. CLEAR PLEX PROTECTIVE PANELS OVER EA. POSTER.
2. BASIC STRUCTURAL MAT'L TO BE 40# FIBERBOARD.
3. IF UNIT IS PLACED IN CORNER SIDE WALLS MUST BE REMOVED & PANELS FASTENED TO WALL.
4. UNIT DELIVERED SEALED, SANDED & PRIMED W/ ALL HARDWARE FOR ASSEMBLY.

FIGURE 6-4

Commuter Information Center -- Detailed View

Appendix

GLOSSARY

articulated bus - a two-section bus that is permanently connected at a joint. An articulated bus is 50 percent longer than a standard bus, has three axles, and can bend around corners.

bus bay - a dedicated parking area for in-service coaches on specified routes, where coaches do not have independent pull-in and pull-out areas. Can be designed to accommodate one or more coaches, but within a given bay, the order of coaches may vary, depending on which coaches arrive first.

bypass lanes - a special lane for HOVs and/or buses that bypasses ramp control signals.

CBD shelter design - a passenger shelter designed specifically for bus stops in downtown Seattle. These shelters feature a flat roof and clear panels, and rely on leaning rails rather than benches to accommodate the maximum number of passengers.

chevrons - pavement markings which provide a buffer zone for contraflow HOV lanes.

concurrent flow HOV lane - lanes designated for HOVs in the normal or with flow direction.

contraflow HOV lane - lanes designated in the direction of opposite traffic flow for use by HOVs traveling in the normal or with flow direction.

drop-and-ride - when patrons of a park-and-ride lot are dropped off or picked up by private auto or taxi.

dual-powered bus - a bus with both diesel and electric propulsion, which can be used interchangeably.

far side stop - a bus stop located immediately following an intersection.

layover - when a bus is scheduled to be at a time point -- a time listed at the head of a column in the route schedule -- longer than the time needed to load and unload passengers.

light rail - a transit rail technology that can operate on a variety of rights-of-way, ranging from on-street to completely grade-separated. Light rail vehicles run on a fixed guideway, generally use overhead wire, and generally consist of shorter train units (two to four cars) than heavy rail.

mid-block stop - a bus stop located 300 feet or more beyond or before an intersection.

near-side stop - a bus stop located immediately before an intersection.

pulse scheduling - a form of scheduling that insures that all routes with coordinated schedules converge at a common point with a brief layover, to allow for transfers between any of the routes.

queue jump lane - a separate lane that allows HOVs to bypass a line of traffic and enter the flow of traffic just before the point of congestion (such as a signalized intersection, narrowing of roadway, or merging traffic.

ramp control - a method of controlling freeway access from entrance ramps by use of traffic signals to monitor flow.

sawtooth bays - a series of bays that are off-set from one another by connecting curblines. They are constructed at an angle from the bus bays. This configuration minimizes the amount of space needed for vehicle pull-in and pull-out.

schedule holders - units mounted to bus stop sign posts or shelter frames that display one to five schedules.

shelter anchor footings - a concrete pad poured as a base for installation of a passenger shelter.

signal priority - traffic signal changes that give priority to HOVs, such as signal preemption, separate HOV phases, and signal offset adjustments.

stanchions - an upright post or support pole.

standard bus - a bus that is approximately 40 feet in length.

streetcar - an electrically powered rail transit vehicle with flanged metal wheels that run on tracks.

transit center - a location where groups of buses or other public transportation vehicles can be brought together at the same time, allowing patrons to transfer between the routes.

trolley bus - a bus that is electrically powered and draws its power from a pair of overhead trolley wires.

turning template - a guide for the layout of the turning radius for various design vehicles.

variable speed control signing - a device that is capable of displaying changing speed limits and/or traffic flow to motorists traveling along a highway.

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